R E M A R K S

Reconsideration of this application, as amended, is respectfully requested.

THE DRAWINGS

Fig. 16 has been amended to be labeled as "Prior Art" as required by the Examiner.

In addition, Fig. 15 has also been amended to be labeled as "Prior Art".

Submitted herewith are corrected sheets of formal drawing which incorporate the amendments and annotated sheets showing the changes made thereto.

No new matter has been added, and it is respectfully requested that the objection to the drawings be withdrawn.

THE CLAIMS

Independent claims 1, 9 and 10 have been amended to clarify the features of the present invention whereby the plurality of pieces of layered image-data are generated based on an output from a plurality of image sensors obtained by reading a document as the object to be read, and that the document is read based on the detected document area.

In addition, the claims have been amended to make some minor grammatical improvements and to correct some minor antecedent

basis problems so as to put them in better form for issuance in a
U.S. patent.

Still further, new claims 13-15 have been added to recite
further patentably distinguishing features of the present
invention.

No new matter has been added, and it is respectfully
requested that the amendments to the claims be approved and
entered.

THE PRIOR ART REJECTION

Claims 1-12 were rejected under 35 USC 103 as being obvious
in view of the combination of USP 6,002,498 ("Haraguchi et al")
and US 2003/0038984 ("Ohkawa"). This rejections, however, is
respectfully traversed with respect to the claims as amended
hereinabove.

According to the present invention as recited in amended
independent claims 1, 9 and 10, an image reading apparatus and a
method for detecting a document area are provided whereby a
plurality of image sensors having different spectral
characteristics from one another are used to read a document as
an object to be read, and whereby a plurality of pieces of
layered image data are generated based on an output from the
plurality of image sensors. As recited in each of independent
claims 1, 9 and 10, a threshold of each of the plurality of

-12-

pieces of layered image data is compared against a pixel value of each of the pieces of layered image data, wherein the threshold is predetermined corresponding to each of the plurality of pieces of layered image data, and the existence of a document image on each pixel is judged. And as recited in each of independent claims 1, 9 and 10, an estimated document area of each of the plurality of pieces of layered image data is determined based on a judging result of the existence of the document image on each pixel (i.e., the output of the comparison section), and the document area is detected based on the estimated document area of each of the plurality of pieces of layered image data.

Similarly, according to the present invention as recited in new independent claim 13, a reading portion is provided which includes a plurality of image sensors having different spectral characteristics from one another, and at least image data of a first color component and image data of a second color component are generated after reading a document using the reading portion. A first estimated document area is determined based on a comparison result between each of pixel value of the image data of the first color component and a first threshold value, and which a second estimated document area is determined based on a comparison result between each of pixel value of the image data of the second color component and a second threshold value. A document area is detected based on the first estimated document

-13-

area and the second estimated document area, and execution of
reading the document is then controlled based on the detected
document area.

Thus, according to the claimed present invention, a
plurality of pieces of layered image-data are generated based on
an output from a plurality of image sensors obtained by reading a
document as the object to be read, and the document is then read
based on the detected document area.

By contrast, it is respectfully submitted that Haraguchi et
al (which is commonly owned by the assignee of the present
application) is directed to a technique for obtaining an analytical
density representing an amount of a color dye with which a print
can reproduce colors of a color image with high fidelity, in the
case where a print is made by an image forming apparatus.

More specifically, Haraguchi et al discloses that a patch
pattern (color chip 26) which has seven-colors of Y, M, C, Y+M,
M+C, C+Y and Y+M+C is printed by an image forming apparatus (24),
to be read by an image reading apparatus (22) in order to
calculate the analytical density (see Fig. 7 of Haraguchi et al).
Significantly, in Haraguchi et al, the object to be read is not a
document but rather is the color chip (26) printed by the image
forming apparatus (24).

On page 3 of the Office Action, the Examiner asserts that
the disclosure at column 10, line 39 of Haraguchi et al

corresponds to the layered image generation section of the present invention as recited in claim 1. It is respectfully submitted, however, that there is no disclosure in Haraguchi et al which suggests reading a document as an object to be read to detect a document area, as according to the claimed present invention. Instead, Haraguchi et al merely relates to only reading color chips to obtain spectral densities of R(red), G(green) and B(blue), and is entirely unrelated to the claimed present invention and not properly combinable with Ohkawa.

Ohkawa (which is also commonly owned by the assignee of the present application) does disclose a technique for recognizing a document area (see paragraph [0084] thereof). It is respectfully submitted, however, that Ohkawa does not disclose, teach or suggest generating a plurality of pieces of layered image data with respect to detecting a document area in a color image, as according to the claimed present invention.

Accordingly, it is also respectfully submitted that Ohkawa does not disclose, teach or suggest comparing a threshold of each of the plurality of pieces of layered image data against a pixel value of each of the pieces of layered image data, judging the existence of a document image on each pixel, determining an estimated document area of each of the plurality of pieces of layered image data, and detecting the document area based on the estimated document area of each of the plurality of pieces of

-15-

layered image data, as according to the claimed present invention. And it is respectfully submitted that even if the teachings of Haraguchi et al and Ohkawa were combinable in the manner suggested by the Examiner, these features of the claimed present invention would still not be achieved or rendered obvious.

In view of the foregoing, it is respectfully submitted that the present invention as recited in each of amended independent claims 1, 9 and 10, new independent claim 13, and claims 2-8, 11, 14 and 15 respectively depending therefrom, clearly patentably distinguishes over the cited references, taken singly or in combination, under 35 USC 103.

* *

Entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned for prompt action.

Respectfully submitted,

/Douglas Holtz/

Douglas Holtz
Reg. No. 33,902

Frishauf, Holtz, Goodman & Chick, P.C.
220 Fifth Avenue - 16th Floor
New York, New York 10001-7708
Tel. No. (212) 319-4900

encs.